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EXAMINER

MACE, BRAD THOMAS

ART UNIT	PAPER NUMBER
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2663

DATE MAILED: 10/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/773,667

Applicant(s)

KILFOYLE, DANIEL B.

Examiner

Brad T. Mace

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-10 and 12-40 is/are rejected.
- 7) ☒ Claim(s) 11 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 February 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Information Disclosure Statement

1. U.S. Patent No. 5,923,325 does not match the date and inventor information supplied on the IDS.

Specification

2. The disclosure is objected to because of the following informalities: "1370" should be "1330" on line 2, on line 5, and on line 7 of pg. 21 in the specification. "110, 1120, 1130, and 1140" are not shown in Figure 11 as indicated on line 28 of pg. 22 through line 1 of pg. 23. "940" should be "930" on line 12 of pg. 26. "them" should be "then" on line 23 on pg. 26. "1730" should be "1740" on line 21 of pg. 27. Appropriate correction is required.

Drawings

3. The drawings are objected to because Figures 7 and 20 are incomprehensible and portions of Figures 8, 10, 11, 12, and 25 are incomprehensible. It is hard to delineate between (a), (e), and (d) in Figure 3, and there are only 3 graphs for 5 labels (a)-(e). It is hard to delineate between dotted lines and the solid lines of Figure 6 as indicated on lines 26-28 of pg. 14 of the specification. Reference 710 of Figure 7 is not pointing at the "Forward Link Manager". It is hard to see what reference 1650 in Figure 17 is pointing to. It is hard to see what reference 1710 in Figure 18 is pointing to. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version

of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency.

Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

4. Figure 2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.121(d)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

5. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: reference 1340 in Figure 13, reference 1030 in Figure 10, and reference

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2210 in Figure 23. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

6. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "900" has been used to designate both C&I and RF system in Figure 9. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

7. Claims 1, 2, 4, 5, 6, 17, 19, 20, 24, 25, 26, 30, and 31 are objected to because of the following informalities: "signal" should be "signals" on line 12 of claim 1. "one" should be placed between "least" and "remote" on line 12 of claim 1. It is unclear as to whether the communication signal stated on line 2 of claim 5 and on line 3 of claim 6 is a downlink or uplink communication signal. It is unclear as to what UE stands for on line 4 of claim 6 and on line 2 of claim 17 and on line 3 of claim 25 and on line 3 of claim 26 and on line 3 of claim 30. Claim 19 is missing a "." on line 3. On line 8 of claim 20, it is unclear which base station the at least one first remote emitter is separately located from. "some" on line 1 of claim 24 should be replaced by "at least one". "first" should be placed between "the" and "user" on line 4 of claim 31. "remote downlink emitter" should be "remote downlink transmitter" on line 2 of claim 4. "type" should be removed from line 2 of claim 2. "physical" should be removed from line 4 of claim 12. "analog" should be removed from line 3 of claim 39. Appropriate correction is required.

8. Claim 36 is objected to under 37 CFR 1.75 as being a substantial duplicate of claim 35. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10. Claims 1, 2, 3, 5, 6, 7, 8, 12, 13, 14, 15, 17, 19, 20, 24, 31, 32, 33, 34, 35, 36, and 39 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,353,729 (Bassirat).

Regarding claim 1:

11. Bassirat discloses a wireless communication network comprising at least one network cell (Figure 4, reference 104), a base station located in the at least one network cell and associated with the network cell for receiving uplink communication signals and transmitting downlink communication signals (Figure 4, reference 216, and col. 11, lines 49-51, where the base station is associated with a forward and reverse link), at least one remote emitter remotely located in the at least one network cell (Figure 4, reference 300, where it is located in cell 104), a communication link between the base station and the at least one remote emitter (col. 9, lines 11-18), wherein all of the uplink communication signals to the base station are directly received and processed by the base station (the reverse link signals in cell 301 (Figure 4) are received by the repeater and directly sent from the repeater 300 to the base station 216, col. 9, lines 16-18), and where the reverse link signals generated by the subscriber stations outside of cells 301 and 401 are directly received by base station 216), and at least one of the downlink communication signals from the base station are processed by the at least one remote emitter and sent from the base station via the at least one remote emitter (col. 9, lines

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11-16, where the repeater receives the transmitted base station signal and re-transmits the base station signal, hence signal is processed to be re-transmitted).

Regarding claim 2:

12. Bassirat discloses wherein the network is a spread-spectrum based, code division multiple access (CDMA) network (col. 10, lines 32-37).

Regarding claim 3:

13. Bassirat discloses wherein the network is a spread-spectrum based, wide band CDMA network (col. 11, lines 8-12, where network cell technology can be of many different protocols such as CDMA, FDMA, etc., where various protocols, such as WCDMA can be used, as indicated by etc.).

Regarding claim 5:

14. Bassirat discloses wherein the uplink communication signals comprise at least one communication signal received by the base station from at least one user equipment (UE) located within the at least one network cell associated with the base station (the reverse link signals generated by subscriber station 208 in cell 301 (Figure 4) are received by the repeater and directly sent from the repeater 300 to the base station 216, col. 9, lines 16-18).

Regarding claim 6:

15. Bassirat discloses wherein the at least one network cell comprises a plurality of network cells (Figure 4, references 202 and 212) and the uplink communication signals comprise at least one communication signal received by the base station from a UE located in a network cell other than the cell which the base station is associated (Figure

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4, where subscriber station 218 is associated with cell 102 and can send reverse link signals to base station 216 since it is also within the cell 104 coverage area).

Regarding claim 7:

16. Bassirat discloses wherein the communication link between the base station and the at least one remote emitter comprises an out-of-band radio frequency (RF) communication link (col. 9, lines 11-18, where the RF repeater can have a wireless communication link between it and the base station).

Regarding claim 8:

17. Bassirat discloses wherein the communication link between the base station and the at least one remote emitter comprises a landline connected communication link (col. 9, lines 11-18, where the RF repeater can have a wire communication link between it and the base station).

Regarding claim 12:

18. Bassirat discloses wherein the at least one network cell is divided into a plurality of sectors for signal reception and signal processing by the base station (Figure 4, where cell 104 comprises the sector enclosed in cell 301 and the portion of the sector cell 401 enclosed within the sector of cell 104, where signals in these sectors can be received and processed by base station 216), and the at least one remote emitter comprises at least one remote emitter assigned to each of the plurality of sectors (Figure 4, where repeater 300 is assigned to sector cell 301 and repeater 400 is assigned to cell sector 401 (portionally enclosed in cell 104)).

Regarding claim 13:

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19. Bassirat discloses wherein the divided plurality of sectors of the at least one network cell comprise physical sectors of the base station (Figure 4, where the sector cell 301 created by repeater 300 encompasses base station 216 and is a physical sector portion of cell 104 created by base station 216).

Regarding claims 14, 19:

20. Bassirat discloses wherein the at least one remote emitter forms a part of a logical sector of the base station (and can emit common channeling signals identical to those emitted by the plurality of physical sectors) (Figure 4, where the portion of the cell 401 enclosed by cell 104 does not encompass base station 216, but comprises a sector of cell 104 and where the repeater 206 forms a logical sector of base station 216 within cell 104 and transmits common channeling signals as those produced by repeater 300 in physical sector 301).

Regarding claim 15:

21. Bassirat discloses wherein the at least one remote emitter processes the at least one downlink communication signal by receiving the downlink signal from the base station, performing physical layer processing of the downlink signal, and transmitting the processed downlink signal (col. 9, lines 11-16).

Regarding claim 17:

22. Bassirat discloses wherein the processed downlink signal is transmitted to and recognized by a UE located within the at least one network cell (col. 9, lines 1-16 and Figure 4, where subscriber station 208 receives the signal transmitted by repeater 300 in cell 301).

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Regarding claim 20:

23. Bassirat discloses a wireless cellular communication network comprising a plurality of network cells (Figure 4, references 104 and 102), a first base station assigned to a first one of the plurality of network cells to receive uplink communication signals and transmit downlink communication signals (Figure 4, reference 216 in cell 104, and col. 11, lines 49-51, where the base station is associated with a forward and reverse link), a second base station assigned to a second one of the plurality of network cells to receive uplink communication signals and transmit downlink communication signals (Figure 4, reference 206 in cell 102, and col. 11, lines 49-51, where the base station is associated with a forward and reverse link), at least one first remote emitter separately located from the base station and assigned to a first one of the plurality of network cells (Figure 4, reference 300, which is located remotely from base station 216 and is assigned within cell 104), at least one second remote emitter assigned to a second one of the plurality of network cells (Figure 4, reference 206 is assigned to cell 102), a first communication link between the first base station and the at least one first remote emitter (col. 9, lines 11-16), a second communication link between the second base station and the at least one second remote emitter (col. 9, lines 11-16), wherein all of the uplink communication signals to the first base station are directly received and processed by the first base station (the reverse link signals in cell 301 (Figure 4) are received by the repeater and directly sent from the repeater 300 to the base station 216, col. 9, lines 16-18), and where the reverse link signals generated by the subscriber stations outside of cells 301 and 401 are directly received by base station 216), and at

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least one of the downlink communication signals from the base station is received, processed, and re-transmitted by the at least one first remote emitter (col. 9, lines 11-16, where the repeater receives the transmitted base station signal and re-transmits the base station signal, hence signal is processed to be re-transmitted).

Regarding claim 24:

24. Bassirat discloses wherein at least one of the uplink communication signals processed by the first base station are directly received by the first base station from at least one user equipment (UE) assigned to the first network cell (Figure 4, where a subscriber terminal outside of cell 301 but inside cell 104 can send uplink communication signals directly to base station 216).

Regarding claim 31:

25. Bassirat discloses a method for increasing user capacity and coverage area of a wireless communication network comprising detecting an uplink communication signal from a first user of the network, assigning the user to a designated area of the network, receiving the uplink communication signal directly from the first user to a base station assigned to the designated area, processing the uplink communication signal at the base station, preparing a downlink communication signal for transmission to a second user of the network, (Figure 4, where a uplink communication signal transmitted by a subscriber terminal outside of 301, but inside cell 104 (hence is assigned to cell area 104) can be directly detected, received, processed, and prepared (for transmission to another subscriber station) by base station 216), assigning a remote emitter to the designated area of the network or the base station (Figure 4, reference 300 in cell area

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104), determining whether to use the base station or the remote emitter for transmission of the downlink communication signal to the second user, and transmitting the downlink communication signal to the second user directly from either the base station or the remote emitter based on the determining (Figure 4, where it is determined where a subscriber station is located, where a subscriber unit outside of cell 301, but within cell 104 can only receive a downlink communication signal directly from base station 216 and where subscriber unit 208 should receive a downlink communication signal directly from repeater 300 since transmission within cell 301 yields a reduction of interference).

Regarding claim 32:

26. Bassirat discloses wherein the first user and the second user are the same user (Figure 4, where subscriber station 208 transmits to the repeater 300, which transmits to the base station 216, and where the base station transmits to the repeater, which transmits back to the subscriber station).

Regarding claim 33:

27. Bassirat discloses wherein the first user and the second user are different users (Figure 4, where a subscriber station outside cell 301, but inside cell 104 transmits directly to base station 216, which then transmits to repeater 200, who transmits to subscriber station 208).

Regarding claim 34:

28. Bassirat discloses providing a communication link between the base station and the remote emitter (col. 9, lines 11-16).

Regarding claims 35, 36:

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29. Bassirat discloses wherein determining whether to use the base station or the remote emitter comprises determining loading conditions of the remote emitter and the base station (Figure 4, and col. 9, lines 65-67 through col. 10, lines 1-10, where if the subscriber station (such as reference 208) is located within the cell of a repeater (such as reference 302) then it is determined that the use of the RF repeater 300 reduces the transmit power of the subscriber station 208, thereby reducing the power (load condition) of the interference received by the base station 216).

Regarding claim 39:

30. Bassirat discloses wherein the remote emitter further comprises an integrated power amplifier and high power RF antenna device for transmitting the analog downlink communication signal to the second user (Figure 5, where the RF repeater has forward gain G_f (amplifier) and transmit antenna G_{af} for transmitting the downlink communication signal).

Claim Rejections - 35 USC § 103

31. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

32. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S.

Patent No. 6,353,729 (Bassirat) in view of U.S. Patent No. 3,916,311 (Martin et al.).

Regarding claim 4:

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33. Bassirat discloses substantially all the claimed invention as specified above, however, does not disclose expressly wherein the at least one remote emitter comprises a remote downlink transmitter (RDT) located at a site remote from the base station and contains no processing capability for uplink communication signals to the base station.

Martin et al. discloses wherein the at least one remote emitter comprises a remote downlink transmitter (RDT) located at a site remote from the base station and contains no processing capability for uplink communication signals to the base station (col. 3, lines 5-18, and Figure 1, where the repeater(s) are located remotely from the transmitter (base station) and is unidirectional (no uplink, only downlink from transmitter to receiver), and where the repeater(s) cannot transmit the signals generated by the mobile station 4 back to the transmitter (base station)).

A person of ordinary skill in the art in which the invention pertains would have been motivated to employ Martin et al. in Bassirat in order to obtain a repeater that only transmits in a (downlink) unidirectional manner. At the time the invention was made, therefore, it would have been obvious to one of ordinary skill in the art in which the invention pertains to combine Martin et al. with Bassirat (collectively Bassirat – Martin et al.) in order to obtain the invention specified in claims 1 and 4. The suggestion motivation to do so would have been to reduce the disadvantage of complexity and cost of simultaneous transmission, amplification, and reception of signals passing in opposite directions (col. 2, lines 1-6).

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34. Claims 9, 10, and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,353,729 (Bassirat) in view of U.S. Patent No. 6,400,959 (Nagira et al.).

Regarding claims 9, 10:

35. Bassirat discloses substantially all the claimed invention as specified above, however, does not disclose expressly wherein the communication link between the base station and the at least one remote emitter comprises an IP network (where the IP network is the Internet).

Nagira et al. discloses wherein the communication link between the base station and the at least one remote emitter comprises an IP network (where the IP network is the Internet) (col. 5, lines 55-67 through col. 6, lines 1-3).

A person of ordinary skill in the art would have been motivated to employ Nagira et al. in Bassirat in order to obtain an IP (Internet) communication link between a base station and a repeater. At the time the invention was made, therefore, it would have been obvious to one of ordinary skill in the art to which the invention pertains to combine Nagira et al. in Bassirat (collectively Bassirat – Nagira et al.) in order to obtain the invention as specified in claims 1, 9, and 10. The suggestion/motivation to do so would have been to compensate for the low output level of some mobile terminals since the receiving repeater that receives data transmitted from the mobile terminal can retransmit the data to the base station through the Internet, thus enabling transmission from the mobile terminal to a desired transmission destination via the base station (col. 5, lines 60-67).

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Regarding claim 37:

36. Bassirat discloses substantially all the claimed invention as specified above, however, does not disclose expressly wherein providing a communication link between the base station and the remote emitter comprises routing signals between the base station and the remote emitter via an IP network.

Nagira et al. discloses wherein the communication link between the base station and the at least one remote emitter comprises an IP network (where the IP network is the Internet) (col. 5, lines 55-67 through col. 6, lines 1-3).

A person of ordinary skill in the art would have been motivated to employ Nagira et al. in Bassirat in order to obtain an IP (Internet) communication link between a base station and a repeater. At the time the invention was made, therefore, it would have been obvious to one of ordinary skill in the art to which the invention pertains to combine Nagira et al. in Bassirat (collectively Bassirat – Nagira et al.) in order to obtain the invention as specified in claims 31, 34, and 37. The suggestion/motivation to do so would have been to compensate for the low output level of some mobile terminals since the receiving repeater that receives data transmitted from the mobile terminal can retransmit the data to the base station through the Internet, thus enabling transmission from the mobile terminal to a desired transmission destination via the base station (col. 5, lines 60-67).

37. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,353,729 (Bassirat) in view of U.S. Publication No. 2002/0155838 (Durrant et al.).

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Regarding claim 16:

38. Bassirat discloses substantially all the claimed invention as specified above, however, does not disclose expressly wherein the physical processing of the downlink signal comprises increasing a data rate of the downlink signal.

Durrant et al. discloses wherein the physical processing of the downlink signal comprises increasing a data rate of the downlink signal (paragraph [0023] (and also lines 1-5 of the abstract)).

A person of ordinary skill in the art would have been motivated to employ Durrant et al. in Bassirat in order to obtain a repeater that increases a data rate of the downlink signal. At the time the invention was made, therefore, it would have been obvious to one of ordinary skill in the art to which the invention pertains to combine Durrant et al. in Bassirat (collectively Bassirat – Durrant et al.) in order to obtain the invention as specified in claims 1, 15, and 16. The suggestion/motivation to do so would have been to have the repeaters increase data rates so that it can support the high data rate transmissions provided by modern wireless data services (paragraph [0023]).

39. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,353,729 (Bassirat) in view of U.S. Patent No. 6,625,198 (Tiedemann, Jr. et al.).

Regarding claim 18:

40. Bassirat discloses substantially all the claimed invention as specified above, however, does not disclose expressly wherein the at least one remote emitter

processes the at least one downlink communication signal by coding, interleaving, spreading, and scrambling the downlink signal.

Tiedemann, Jr. et al. discloses wherein the at least one remote emitter processes the at least one downlink communication signal by coding, interleaving, spreading, and scrambling the downlink signal (Figure 2, reference 242 and col. 5, lines 21-37, where reference 104 is a remote emitter (transmitting subsystem) that processes the downlink communication signal to be sent).

A person of ordinary skill in the art would have been motivated to employ Tiedemann, Jr. et al. in Bassirat in order to obtain a remote emitter that processes the downlink transmission signal by coding, interleaving, spreading, and scrambling the downlink signal. At the time the invention was made, therefore, it would have been obvious to one of ordinary skill in the art to which the invention pertains to combine Tiedemann, Jr. et al. in Bassirat (collectively Bassirat – Tiedemann, Jr. et al.) in order to obtain the invention as specified in claims 1 and 18. The suggestion/motivation to do so would have been to have the remote emitter process the downlink signal so that transmission of the downlink signal is transmitted according to standard practice and so that the signal is received properly/correctly at the subscriber station.

41. Claims 21, 22, 23, 25, 26, 27, 28, 29, 30, and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,353,729 (Bassirat) in view of U.S. Patent No. 6,005,884 (Cook et al.).

Regarding claims 21, 22, 23, 25, 26, 27, 28, 29, 30:

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42. Bassirat discloses substantially all the claimed invention as specified above, however, does not disclose expressly further comprising a first managing tool assigned to the first network cell, wherein the managing tool dynamically and independently controls assignments of all the uplink and downlink communication signals to the first base station and the at least one first remote emitter, wherein the first managing tool further controls assignment of uplink communication signals to the second base station, and wherein the first management tool is implemented at the first base station, further comprising a downlink managing tool that determines availability of the at least one first remote emitter for downlink registration or access of a UE located in the first network cell, and further comprising a managing tool that controls availability of the second base station to receiving uplink communication signals from a UE located in the first network cell, and further comprising a downlink managing tool that determines availability of the at least one first remote emitter for downlink communication with a UE based at least on a performance metric of the at least one first remote emitter, a performance metric of the first base station, and a health metric of the first communication link.

Cook et al. discloses further comprising a first managing tool assigned to the first network cell (Figure 8A, where signal processor 28 is part of base station 12 which is part of the network cell), wherein the managing tool dynamically and independently controls assignments of all the uplink and downlink communication signals to the first base station and the at least one first remote emitter (Figure 8A, where the signal processor 28 controls all the uplink and downlink communication signals to and from the repeaters (remote emitters) and also to and from the base station 12), wherein the first

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managing tool further controls assignment of uplink communication signals to the second base station (Figure 9, where the signal processor is part of base station 12', which is connected to base station 12'' through a LAN line and should base station 12' receive desire data from base station 12'', then the signal processor controls data received through the LAN line that was received at base station 12'' as uplink data), and wherein the first management tool is implemented at the first base station (Figure 8A, where signal processor 28 is implemented in base station 12), further comprising a downlink managing tool that determines availability of the at least one first remote emitter for downlink registration or access of a UE located in the first network cell (Figure 8A, where if the signal processor is either transmitting or receiving data from the repeaters, then it is determined that the repeaters are active), and further comprising a managing tool that controls availability of the second base station to receiving uplink communication signals from a UE located in the first network cell (Figure 9, where if the signal processor of base station 12' is transmitting data to base station 12'' through LAN line 36 to be transmitted to the repeater 18'' and to a corresponding UE, then the availability of the second base station to receiving uplink communication signals from the UE is not available), and further comprising a downlink managing tool that determines availability of the at least one first remote emitter for downlink communication with a UE based at least on a performance metric of the at least one first remote emitter (Figure 8A, where if the signal processor 28 is transmitting or receiving data from a repeater, then the repeater has an active performance), a performance metric of the first base station (Figure 8A, where if the signal processor 28

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of base station 12 is receiving or transmitting data to the LAN line or the repeaters, then the base station has an active performance), and a health metric of the first communication link (Figure 8A, where if the signal processor 28 is transmitting or receiving data from a repeater, then the communication link between the base station and the repeater has an active health (is currently in use)).

A person of ordinary skill in the art would have been motivated to employ Cook et al. in Bassirat in order to obtain a managing tool that manages the uplink and downlink communication signals of the base station and repeater. At the time the invention was made, therefore, it would have been obvious to one of ordinary skill in the art to which the invention pertains to combine Cook et al. in Bassirat (collectively Bassirat – Cook et al.) in order to obtain the invention as specified in claims 20, 21, 22, 23, 25, and 26. The suggestion/motivation to do so would have been to have a device that manages the uplink and downlink communication signals of the base station and repeater so that proper control of which device and at what time transmission of the uplink and downlink communication signals is to occur.

Regarding claim 38:

43. Bassirat discloses substantially all the claimed invention as specified above, however, does not disclose expressly wherein the downlink communication signal comprises a digital signal, and remote emitter comprises a digital-to-analog converter for converting the digital downlink communication signal into an analog signal for transmission to the second user.

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Cook et al. discloses wherein the downlink communication signal comprises a digital signal, and remote emitter comprises a digital-to-analog converter for converting the digital downlink communication signal into an analog signal for transmission to the second user (see repeater (remote emitter) 20 in Figure 4).

A person of ordinary skill in the art would have been motivated to employ Cook et al. in Bassirat in order to obtain a remote emitter (repeater) that converts digital downlink communication signals into analog signals for transmission to the second user. At the time the invention was made, therefore, it would have been obvious to one of ordinary skill in the art to which the invention pertains to combine Cook et al. in Bassirat (collectively Bassirat – Cook et al.) in order to obtain the invention as specified in claims 31 and 38. The suggestion/motivation to do so would have been to convert the digital downlink communication signals into analog signals so that receiving analog subscriber stations can receive the downlink transmission signal.

44. Claim 40 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,353,729 (Bassirat) in view of U.S. Patent No. 6,078,823 (Chavez et al.), as submitted by applicant.

Regarding claim 40:

45. Bassirat discloses substantially all the claimed invention as specified above, however, does not disclose expressly wherein the integrated power amplifier and high power RF antenna device is implemented as a multilayered printed wiring board package.

Chavez et al. discloses local transceivers are mounted on printed circuit boards (col. 3, lines 54-57, transceivers 130 having an antenna and is coupled to remote transceivers 112 having amplifiers, thus yielding a package).

A person of ordinary skill in the art would have been motivated to employ Chavez et al. in Bassirat in order to a repeater (remote emitter) that is implemented as a multilayered printed wiring board package. At the time the invention was made, therefore, it would have been obvious to one of ordinary skill in the art to which the invention pertains to combine Chavez et al. in Bassirat (collectively Bassirat – Chavez et al.) in order to obtain the invention as specified in claims 31, 32, 39, and 40. The suggestion/motivation to do so would have been to have the local transceiver mounted on a printed circuit so as to fit the local transceiver into a housing that can be placed as a package with the coupled remote transceiver (having the antenna) so that it can be placed in a repeater.

Conclusion

46. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brad T. Mace whose telephone number is (571) 272-3128. The examiner can normally be reached on Monday -Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau Nguyen can be reached on (571) 272-3126. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

btm

Brad T. Mace
Examiner
Art Unit 2663

btm
September 30, 2004



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